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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/730,355	12/08/2003	Jiankang Huang	F0017/7000	6230

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EXAMINER	
LEDYNH, BOT L	

ART UNIT	PAPER NUMBER
2862	

DATE MAILED: 08/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/730,355	HUANG ET AL.	
	Examiner	Art Unit	
	Bot LeDynh	2862	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *05 June 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-13,27-31 and 43-45* is/are pending in the application.

4a) Of the above claim(s) *29-31* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-13,27,28 and 43-45* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *2/27/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Applicant's election of species I in the reply filed on 6/5/05 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claims 29-31 do not read on the species of Fig.4 and are hereby withdrawn from further consideration.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-2, 8, 11, 13, 27-28, 43-45 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by Viehland et al (7023206). Viehland et al discloses the same invention as claimed. See Fig.5 and related paragraphs; also, PZT being ferroelectric.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 3, 6-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Viehland et al. in view of O'Boyle (20020011123 A1) and/or Tanaka et al (JP 11258077). Viehland et al discloses substantially the same invention as claimed, including magnetostrictive material being nickel and iron-colbalt alloys. See col.6 lines 7-12. However, Viehland et al does not disclose the composition of Ni or Co. O'Boyle (20020011123 A1) and Tanaka et al (JP 11258077) disclose to that effect. See Tanaka's translation of abstract; O'Boyle'paragraphs 0021-0025. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Viehland et al by employing the magnetostrictive material consisting of iron-nickel alloy having substantially 50% Ni, or by employing the magnetostrictive material consisting of iron-cobalt alloy having substantially 55% Co in order to magnetize the material depending upon the level of stress applied to the material. See Villari effect phenomenon disclosed in O'Boyle's paragraph 0021. In the absence of criticality, the specific weight in the composition of the magnetostrictive material is a matter of design choice depending on level of applied stress.

Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viehland et al. in view of O'Boyle (20020011123 A1) and Plonsky et al (5940362). Viehland et al discloses substantially the same invention as claimed, except for the magnetostrictive material consisting of FeCoBSi (with specific wt,). O'Boyle and Plonsky et al disclose

that magnetostrictive material consists of FeCoBSi for magnetizing the material depending upon the level of stress applied to the material. See Villari effect phenomenon disclosed in O'Boyle's paragraph 0021, and Plonsky et al's col.5 in lines 15-20. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Viehland et al by employing the magnetostrictive material consisting of FeCoBSi (with specific wt,) in order to magnetize the material depending upon the level of stress applied to the material. See Villari effect phenomenon disclose in O'Boyle's paragraph 0021 and Plonsky et al's col.5 in lines 15-20. In the absence of criticality, the specific weight in the composition of the magnetostrictive material is a matter of design choice depending on level of applied stress.

Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viehland et al. in view of Chiang et al (2002/0036282). Viehland et al discloses substantially the same invention as claimed, except for the electroactive material consisting of (BiNa)BaZrTiO) (with specific wt,). Chiang et al discloses such a material in order to acquire superior piezoelectric properties. See paragraph 0024. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Viehland et al by employing electroactive material consisting of (BiNa)BaZrTiO) (with specific wt,) in order to exhibit superior piezoelectric properties. See paragraph 0024.

Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viehland et al. in view of Kashiwaya et al (6610427) and Cava et al (5658485). Viehland et al discloses substantially the same invention as claimed, except for the electroactive material consisting of Pb(MgNb)O) (with specific wt,). Kashiwaya et al (6610427) and

Cava et al (5658485) disclose such a material for improving the piezoelectric properties. See Kashiwaya et al (6610427), col. 1 lines 38-43; and Cava et al (5658485), col.1 lines 47-48. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Viehland et al by employing electroactive material consisting of Pb(MgNb)O) (with specific wt,) in order to improve piezoelectric properties. See Kashiwaya et al (6610427), col. 1 lines 38-43; and Cava et al (5658485), col.1 lines 47-48.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viehland et al. Viehland et al discloses substantially the same invention as claimed, except for the nonconductive glue being epoxy. It is well known in the art that epoxy is being used as nonconductive glue in order to glue two substrates together. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Viehland et al by employing epoxy as the non-conductive insulation in order to glue the two layers MS and PZ together.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Viehland et al. in view of O'Boyle (20020011123 A1) and Hase et al (4823617). Viehland et al discloses substantially the same invention as claimed, except for the magnetostrictive material consisting of FeBSi (with specific wt,). O'Boyle and Hase et al disclose that magnetostrictive material consists of FeBSi in order to magnetize the material depending upon the level of stress applied to the material. See Villari effect phenomenon disclose in O'Boyle's paragraph 0021 and Hase et al's col.5 in lines 25-65.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Viehland et al by employing the magnetostrictive material consisting of FeBSi (with specific wt,) in order to magnetize the material depending upon the level of stress applied to the material. See Villari effect phenomenon disclosed in O'Boyle's paragraph 0021 and Hase et al's col.5 in lines 25-65. In the absence of criticality, the specific weight in the composition of the magnetostrictive material is a matter of design choice depending on level of applied stress.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 2-3 and 44 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 2-3 and 44 contain the trademark/trade name Terfenol-D. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods

associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe a source of goods and, accordingly, the identification/description is indefinite.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1, 27 and 43 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 3 of U.S. Patent No. 6984902. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 3 of the patent anticipates claims 1, 27 and 43; and "anticipation is epitome of obviousness."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dr. Bot LeDynh whose telephone number is 5712722231. The Examiner normally does not work on Fridays. The examiner can normally be reached on Maxiflex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Lefkowitz can be reached on 5712722180. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

BL/ 2006

Bot LeDynh, J.D., Ph.D., D.A.
Primary Examiner